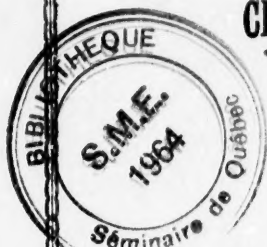


CANADIAN NORTH-WEST.

CLIMATE AND PRODUCTIONS.



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A MISREPRESENTATION EXPOSED.

(FIFTH EDITION.)

PUBLISHED BY THE DEPARTMENT OF AGRICULTURE OF THE
GOVERNMENT OF CANADA.



OTTAWA.

1883.

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No.

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CLIMATE AND ENVIRONMENT

A REPORT FOR THE CLIMATE AND ENVIRONMENT

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CANADIAN NORTHWEST.

CLIMATE AND PRODUCTIONS.

A MISREPRESENTATION EXPOSED.

A small, well-printed pamphlet with a map shewing the line of the Northern Pacific Railway from Duluth, at the head of Lake Superior, westward to the ocean, has been received by the Department of Agriculture from a correspondent in the United Kingdom, who states that it is very widely circulated by the Agents of Steamship Lines, between Liverpool and New York. This pamphlet, which is printed in New York with the title at the foot of this page,* styles itself, "*The Reliable Guide to the American North-West.*"

It is not the object of these pages to examine the confidence which may be placed in the fidelity of this "Guide" to Western States and Territories; but simply to point out the misstatements contained in a paragraph which we subjoin; with the object of preventing intending emigrants from the United Kingdom from being grossly deceived.

To explain the connection of this paragraph, it is well to say, first, the writer describes Montana as "the land of dry atmosphere and almost perpetual sunshine;" where under the influence of the "Chinook winds," "the mercury fairly bounds from 30° below to 50° above;" where sometimes within the space of two days in mid-winter these winds "have been known to break up the ice in all the rivers, and to cause a heavy fall of snow to disappear;" and then the writer goes on to say:

* "*The Settler's Guide to the North-West.*" June 1st, 1882. New York, E. Wells, Sackett and Rankin, Printers and Stationers, 56 and 58 William street.

"The width of country in which this winter climate maintains is limited. Up in Manitoba, in the Canadian Dominion, is a wholly different condition. The excellent line of the Canadian Pacific Railway, as projected, was changed for the worse to the south, in the vain hope to get away from frosts in July and August. *The climate of Manitoba consists of seven months of Arctic winter and five months of cold weather.* And Manitoba is a country of spring floods which drown out all the farms in all the valleys. Her principal river has the peculiarity of running from the south in the United States straight north. The mouth of the Red River is frozen solid when the head and middle of the stream are broken up and running swiftly under the southern spring warmth. The ice dams at and around Winnipeg in a vast obstruction like a mountain barrier. The water sets back and covers all the surrounding country, drowning stock, floating away dwellings, buildings and fences, and driving the farmers off to the tops of hills to save their lives. So it is with Canada's rivers which flow from the west eastward, tributaries to this Red River. They all rise in the Rocky Mountains. The temperature of the foothills of this range being warmer than the open plains of water-soaked Manitoba, all these streams in spring commence running ice at the head before they open at the mouth. The consequence is floods, which annually desolate Manitoba and keep the people who have been coaxed into it anxious, poor and sick. 'Tis a pity that Canada is so cold and so subject to be annually drowned out; for it has a belt of wheat land extending to the Rocky Mountains as rich as any land south of the international boundary line."

It is related that a pedler who once turned local preacher, gave his last advice to his son in these words:—"Honesty is the best policy; I know, for I have tried both, my son." It may probably happen that the Land and Railway Corporations in whose interest the above grossly overdone libel was written and published, may in the end come to perceive the truth in respect to it conveyed by the pedler's confession. The facts pertaining to the climate, the products, the rivers, and the soil of Manitoba and the Canadian North-West, are, fortunately for the object of this reply, both broad and well ascertained; and they are moreover within the personal knowledge of thousands of men, whose evidence can be obtained. But for the purpose of these pages it will be enough to appeal to the testimony of a few witnesses, whose statements will everywhere be received and believed.

First, however, it is well to say that the latitude, namely, the 49th parallel which is the southern frontier of Manitoba and the Canadian North-West, if extended due east across the Atlantic Ocean, would strike Europe a little to the south of Paris; and the country has the summer suns of Europe at and above that latitude, with, however, a lower winter temperature, as marked by the thermometer, of which some further particulars will be hereinafter given.

It may be mentioned as a specific fact, that the summer warmth of Manitoba is sufficient to ripen the tomato, the melon and Indian

corn in the open air, which is impossible in any part of England. The summer mean of Manitoba is $67^{\circ} 76'$ Fahrenheit, which is about the same as that of the State of New York ; while the winter mean is perhaps a little less than that of parts of Minnesota and Dakota on account of lower altitude (and for some other reasons) together with less liability to violent storms. The causes for this state of things will be more fully referred to later.

We will in the first place appeal to the testimony of His Grace ARCHBISHOP TACHÉ, whose long life in the North-West, and extensive travels over nearly every part of it, as well as his eminent position and character, specially fit him to be a judge, and entitle his words to authority. He has written a letter to the Rev. Father Nugent, a copy of which we have been enabled to obtain for publication here :

A Letter from His Grace Archbishop Taché.

ST. BONIFACE, MANITOBA,

25th October, 1882.

REV. AND DEAR FATHER NUGENT :—

I take the liberty to address you the following remarks with regard to a certain pamphlet which has been published in the United States, and is, I am told, largely circulated in England.

You take an interest in directing emigration towards Manitoba, and as the publication I allude to is of a nature to debar your generous efforts, you may like to know my views on the matter.

The pamphlet says : " The climate of Manitoba consists of seven months of Arctic winter, and five months of cold weather." This, I would understand, from a man inhabiting the torrid zone ; but I confess it perfectly unintelligible when written in, and to praise the Dakota Territory, United States.

Here, in Manitoba, as well as in Dakota, the winter is pretty severe ; but our summer on the contrary is very warm ; so much so that Europeans have repeatedly stated that they find it hotter than in the British Islands. For my part, after thirty-seven years of experience, I find the season more pleasant in Manitoba than in any other country I have seen. Your personal experience of our climate is unhappily limited to two short visits to Manitoba, but you have seen with your own eyes, the magnificent products of our rich soil, and you are surely satisfied, as I am, that such a result could not be obtained if we had no summer.

The writer of the pamphlet, who endeavours to depreciate Manitoba, seems to be no better acquainted with our geographical position than with our climate when he says : " Rivers which flow from the west " eastward, tributaries to this Red River all rise in the Rocky Mountains." The fact is that there is no connection whatsoever between

our Red River and any stream flowing from the Rocky Mountains. As to the graphic description given of floods originating in the Rocky Mountains "which annually desolate Manitoba and keep the people "who have been coaxed into it anxious, poor and sick," such a description has no application here. Every one who has visited our country knows that anxiety, poverty and sickness are not the characteristics of our population.

Although our Red River does not flow from the Rocky Mountains, still its rise has sometimes caused damage, but nothing beyond what we hear from countries the least afflicted in that respect.

The records of this country mention three over-flowings of the Red River; the first in 1826, the second in 1852, and the third in 1861. But to complete the information, I may add that the same Red River has flooded oftener at some points where it divides the State of Minnesota from Dakota territory, and at such points, I know of three floods against one near Winnipeg.

We are told in the same pamphlet that in the spring (and it gives us to understand every spring) "the ice dams at and around Winnipeg in "a vast obstruction like a mountain barrier. The water sets back "and covers all the surrounding country"

This is merely a fiction. The oldest resident of Manitoba never saw nor heard of anything of the like.

If we can trust—and I am sure we can—newspapers published in the portion of Dakota traversed by the Missouri, describing the flood there in 1881, it is evident that the pamphlet gives a just idea of the disasters caused by a mighty river which, as well as many of its "tributaries, rises in the Rocky Mountains." The sole error of the pamphleteer, on this point, lies in the fact that such a river is to be found in Dakota Territory, and not in Manitoba. May God guard us against such an awful visitation!

Dear Father, you know what I told you when I had the pleasure of your visit, and you will easily understand that my object is not to depreciate the advantages offered by the Dakota Territory, but merely to repudiate inaccurate statements referring to Manitoba and the Canadian North West.

Kind Providence has done for this part of the Canadian possessions, at least as much as for the neighbouring States and Territories. So I will surprise nobody who knows the country, in stating that our Co-British subjects who are willing to emigrate from their native land, ought to prefer coming to Manitoba and the Canadian North-West.

I remain with deep respect and esteem,

Reverend and Dear Father,

Faithfully yours,

† ALEX. ANT.: OF ST. BONIFACE.

It is not necessary to make any comment upon these words of His Grace. They are clear and cover the whole ground. The case in fact might stop here ; but there are further witnesses.

In the next place we will take the testimony of the Rev. Dr. BRYCE, of Winnipeg. The following is an extract from a letter written by him which appeared in an Edinburgh newspaper some months ago :

Extract from a Letter of the Rev Dr Bryce.

"The very modifying influence that brings with it a milder climate to Britain, carries with it one very important element of discomfort—viz., moisture. The Manitoba winter is exceedingly dry, and, in consequence, there is no impression made on the body by low states or temperature, which, in a moist climate, would be unbearable. The absence of moisture also preserves a steady continuance of one kind of weather, very much for our comfort. It is well known, that it is the rapid change—one day bright, the next wet, one day frosty, the next muggy—that is so trying to the body.

"The dryness of the climate and the clear air are taken advantage of frequently by consumptives, who come from other parts of America and are cured. I can name several persons of my acquaintance who, on coming to the country, were said to be far advanced in consumption, and who have now recovered. The dry, clear air gives an elasticity to the frame, noticed by all who visit the North-West. As to the sensation of cold, I have stood outside with hands and face uncovered, and throat bare, looking at the thermometer registering ten degrees below zero, and have had no feeling of discomfort whatever. It is in my recollection of having driven my sleigh to a country parish about 15 miles from Winnipeg on a Christmas Day, and of having been engaged in visiting from house to house all the day with the thermometer standing at 40 degrees below zero. The horse was left outside in most cases, simply having the buffalo robe thrown over him, and suffered nothing, while myself and driver, though going in and out from cold to hot and hot to cold, felt no inconvenience.

"Herds of horses were formerly kept by the old settlers, which lived out the winter through. I have seen horses which had been born on the prairie, and had reached six or seven years of age without ever being under a roof. Cattle, so far as the cold is concerned, can live outside during the whole winter ; but they must have the company of horses, which can break the snow crust for them, to allow the dry grass beneath to be obtained. It is not, of course, to be inferred from this that farmers now allow their horses and cattle to go unhoused for the winter. What can be done, and what it is best to do, are different things. The winter sets in about the middle of November ; until early in January the weather is often dark and stormy, and in December the coldest weather generally comes. In January, as the common expression goes, 'the back of the winter is broken,' and there is for two or three months after that a most brilliant and

unclouded sky almost continuously. So strong is the sun in its reflection from the snow, that farmers and those much out in the open air protect their eyes with green gauze, close spectacles and the like. In March or early in April, the snow passes away, and spring is at once present—if, indeed, there be a spring at all, so soon does summer follow in its wake. It has been my experience to see the country with the snow gone and most balmy weather on the 31st of March in several different years, and on two years out of the last ten in the middle of March. The snowfall of the North-West is comparatively light. One and a half or two feet may be taken as the average depth over the ten years just past. Some persons met on this side of the Atlantic seem to regard four and a half or five months of winter as very long. The cessation of all work in the fields seems to make British agriculturists think with such a season farming can scarcely be carried on. On the other hand the North-West winter is found quite short enough for all the work to be done in it. The grain must, much of it, be then threshed. The great facilities for transport afforded by the sleighing, by means of which enormous loads can be taken, are used for drawing wood, cutting and drawing fencing materials, and collecting timber, stone, lime, &c., for building—similar work to what, so far as circumstances require it, I suspect, is relegated to wet days by the British farmer."

Next we insert an extract from a letter from His Honour Lieutenant-Governor ROBINSON, of the Province of Ontario, to the Minister of Agriculture.

The letter from which this extract is taken is personal and unofficial, and is therefore a free expression of His Honour's views, after a visit to the North-West:—

Extract from a Letter of the Lieut.-Governor of Ontario.

GOVERNMENT HOUSE,
TORONTO, November 1st, 1882.

MY DEAR POPE,—

* * * * *

And now, before finishing my letter, let me add that which you may have seen in the newspapers, that I have lately returned from a trip to Manitoba and the North-West territory, tempted to do it so speedily after my return from England owing to the many enquiries made of me when there respecting it.

Having seen it for myself, I am able to give a ready answer to all enquiries about this portion of our Dominion, now attracting so much attention. I must say that no better land purchase was ever made on this continent than when our Government by a payment of £300,000, acquired this magnificent Territory. One little town in it now, is worth what was paid to acquire the whole.

Judging from what I saw myself, and from what I heard from others conversant with the territory whom I was continually meeting, its agricultural area is almost unlimited, the fertility of its soil unequalled, producing crops, such as I, a native of this Province, or the Ontario farmer never saw before. I met a great many I had known in Ontario, and others as well, settled all over this new country, and never heard a complaint from one of them; all speaking as if they individually had made the best selection, and that their particular location or grant from the Government, was the best. I never met a more contented or hopeful lot of men, and well they may be, for they have the finest land under heaven as a free gift, ready by nature for the plough, and safe by the industry of a few years to place themselves and families in comfortable circumstances for the rest of their days. I saw several whose first year's crop had so gladdened their hearts, that they already fancied themselves above all want. Two friends, lately from England, accompanied me, and liked this grand country so much that they bought land for their sons, intending on their return to send the boys out next spring; and they are men who have seen many countries, and are consequently well able to choose and judge for themselves. I left that section of the North-West, say, 400 miles West from Winnipeg and the Qu'Appelle valley nearer Winnipeg, towards the end of October. The weather was bright and clear; the mildness of it astonished me. No one could wish for better; it was thoroughly enjoyable, and just the climate for strong exercise without fatigue. I do not know if you care to hear it, but may as well tell you, of that which pleased our English friends who love sport so much—that game, such as snipe, duck and prairie grouse were abundant, and that we were all well supplied with these luxuries on the Prairies.

I liked Manitoba and the North-West so much, and was so greatly struck with its fertility and climate, that I look forward with much pleasure to paying it another visit. In truth, no one can realize its immense advantages till they see it for themselves, which, when opportunity permits, you should do.

Two months of the dry air of the prairies would set you up for many a year.

Very truly yours,

J. B. ROBINSON.

The Hon. J. H. POPE,
Minister of Agriculture, Ottawa.

Next is inserted a letter from Mr. R. W. CAMERON, of New York, late Honorary Commissioner for Canada at the recent Exhibitions at New South Wales, and Victoria, Australia, whose intelligent reports on the resources and progress of the Australian colonies, in view of the possible trade relations with Canada, have recently attracted much attention. Mr. Cameron is not only a sharp and intelligent, but also an experienced observer, whose testimony is of value:

Letter from Mr. R. W. Cameron, of New York.

NEW YORK, 24th OCT., 1882.

MY DEAR SIR :—

I have just returned from an extended tour in the North-West, going to the end, so far as completed, of the Canadian Pacific Railway, some four hundred and eighty miles beyond Winnipeg. I also took waggon and branched off to Forts Qu'Appelle and Ellice, and examined the valleys of the Assiniboine and Red River, returning via Rat Portage and Prince Arthur's Landing.

For Agricultural purposes the whole plain from Winnipeg to beyond Moose Jaw, a distance of nearly five hundred miles, is with small exceptions as fine in soil and climate as any that has come under my observation. I have traversed Kansas, Nebraska, Wyoming and Colorado, and in none of them have I seen the depth of rich soil that I saw on the line of the C. P. R. R. The soil around Winnipeg, Portage la Prairie, Brandon and Regina, is the richest I have ever seen, and as to the climate, I visited it for the benefit of my health, which for some time previous had been much shattered, and received more benefit from my month's stay in the North-West than I believed possible. I found myself capable of more physical exertion than I could possibly have stood in this climate at any time within the past ten years. A walk of ten miles which I made without extra exertion in two and a quarter hours, fatigued me less than a walk of a third of the distance would have done here. The climate is bracing and exhilarating beyond any hitherto experienced by me.

I left Winnipeg on the 16th instant. Up to that date the weather was delightful; clear and bracing, and without frost or snow. Ploughing was progressing all along the line of Railroad. I was at Qu'Appelle on the 9th, at Ellice on the 11th, and thence to Winnipeg on the 12th and 13th. The Contractors on the Road expected another month of Indian Summer weather for their work. At Fort Ellice I met a settler just arrived from Ontario, who expected to complete his ploughing (which he had not then commenced) before bad weather set in. The crops had all been gathered, stacked, and to a large extent threshed before my arrival in the country. The quality of the grain and roots, you know all about. I brought from the Roman Catholic Mission at Qu'Appelle, some potatoes, which I intend to preserve for seed next spring—the finest I have ever seen. I weighed two that turned the scale at $4\frac{1}{2}$ lbs., one of them being $2\frac{1}{2}$ lbs. The original seed was the "Early Rose" and the product was four times the size of the seed used, and for soundness and flavour no potato could surpass them. Indeed, during my stay in the country I never found an unsound or watery potato. I saw in the market at Winnipeg splendid specimens of carrots and cauliflowers.

On my return from Winnipeg via Rat Portage to Prince Arthur's Landing, I saw no good farming land. It is all either swampy or rocky, and the only hope of that country is the value of the timber

and such minerals as may be found. I was told that there is good agricultural land on Rainy River and south of Lake of the Woods, but I did not see this country. I also heard wonderful accounts of the soil and climate of the Saskatchewan Valley, but cannot speak from experience. Col. McLeod informed me at Winnipeg that he preferred the country around his residence at Fort McLeod to any portion of the North-West, and I believe that for stock-raising purposes the nearer you approach the Rocky Mountains the better, as there cattle can exist without shelter all the year round, whereas between Winnipeg and Regina I am satisfied that cattle and horses must be fed and housed from December to March or April. The native horse keeps fat and in good condition throughout the whole territory all the year round, and is in much better condition when taken up in the spring than when turned out in the Autumn, but the native horse knows where the nutritious grass is to be found, and understands pawing the snow off so as to reach it. This would not be the case with imported stock, whether horses or cattle.

There is a great future for this part of the Dominion.

I have made no investments, for the reason that the Government regulations prevent my buying a large tract, and I have no ambition to become a settler on a section of land.

I do not own a lot or an acre in the Territory, but I would gladly purchase ten or twenty thousand acres and farm it on scientific principles if your land regulations permitted my doing so.

I remain,

My dear Mr. Pope,

Yours faithfully,

R. W. CAMERON.

HON. J. H. POPE,

Minister of Agriculture.

To this recent observation of Mr. Cameron may be added an extract from a letter of the Honourable Horatio Seymour, late Governor of New York, descriptive of a visit he made some months ago:—

Extract from a Letter of late Governor Seymour, of New York.

"I saw thousands and thousands of acres of wheat, clearing 40 bushels to the acre, weighing 63 and 65 pounds to the bushel, and was assured by undoubted authority that on Peace River, 1,200 miles north-west of where I was, wheat could be produced in immense quantities equal to the best I saw in Winnipeg, while great herds of cattle were being fed without cost on as fine grassy land as the world affords. In short, between our north-western line of 45 degrees and 54 degrees 40 minutes (General Cass' fighting point) there is a country owned by England with greater grain and stock-growing capacity

than all the lands on the Baltic, the Black Sea and the Mediterranean combined. The land laws of Canada are now as liberal as ours as to the homestead, pre-emption and free claims. People are crowding there rapidly, and towns are springing up as if by magic. The great railway will reach the Pacific at the grand harbour of Puget Sound before our Northern Pacific will, and it will be extended eastward promptly to Montreal. The distance to Liverpool will be 600 miles shorter than any American line can get the wheat of Dakota there."

To take another American witness, the following is an extract from a letter of the late Honourable WILLIAM H. SEWARD, the Foreign Secretary to the late President Lincoln during the war with the South. His statement is both frank and explicit :—

Extract from a Letter of the late Hon. Wm. H. Seward.

"Hitherto, in common with most of my countrymen, as I suppose, I have thought Canada a mere strip lying north of the United States, easily detached from the parent State, but incapable of sustaining itself, and therefore ultimately, nay, right soon, to be taken on by the Federal Union, without materially changing or affecting its own development. I have dropped the opinion as a national conceit. I see in British North America, stretching as it does across the Continent from the Atlantic to the Pacific, in its wheat-fields of the West, its invaluable fisheries, and its mineral wealth, a region grand enough for the seat of a great empire."

We will take yet one more American witness with regard to the productiveness of Manitoba, as respects the cereals, namely, *Harper's Magazine* of New York, one of the most distinctive American periodicals published on the Continent. The following is from a late number of this magazine :—

Extract from Harper's Magazine.

"The experience of the wheat-raisers in Manitoba has now been of sufficient length to make understood some of the natural advantages extended to this country for returning large and certain crops But most noteworthy is the soil itself—an alluvial black loam, with an average depth of twenty inches, resting on a subsoil of clay..... Dropped into this soil, with the other favouring circumstances, seed springs up and grows with an extraordinary vigour, and gives a sound and abundant crop. The average yield of wheat per acre in the Red River Valley, north of Fargo, where the soil becomes heavier and more characteristic, is twenty-three bushels. *In Manitoba and the Saskatchewan region the average is greater, and amounts to twenty-eight bushels.* These facts become more striking when compared with results in the district of the wheat supply at present. In Illinois the average for wheat to the acre is seventeen bushels; in

Iowa ten ; in Wisconsin less than ten ; in Kansas ten ; while in Texas it is eight and one-half bushels. Nor does the land seem to deteriorate under a course of cropping, as does the lighter soil of the States in the south."

The following is from a report of Professor Sheldon, of the College of Agriculture, Downton, England :—

From a Report of Professor Sheldon.

"I was much surprised to find among the Manitoban farmers one of my old Cirencester pupils. He had bought a farm of some 400 acres a few miles west of Winnipeg, paying as was thought, the extravagant price of 20 dollars (£4) an acre. He declared, however, to me that he had the best farm in the locality, which may be taken as evidence of his being satisfied with it ; and he was growing crops of turnips, potatoes, oats, &c., which were already a theme of conversation in the Province ; this was done by better cultivation than the land of Manitoba is used to, and it is clear that the soil will produce almost any kind of crop in a very satisfactory way, providing it is properly attended to."

The following is also from a report of Professor Sheldon :—

"The soil of Manitoba is a purely vegetable loam, black as ink, and full of organic matter, in some places many feet thick, and resting on the alluvial drift of the Red and Assiniboine Rivers. It is, of course, extremely rich in the chief elements of plant-food, and cannot easily be exhausted ; the farmers know this, so they take all they can out of it in the shortest possible time, and return nothing whatever to it in the form of manure. By turning up an inch or two of fresh soil now and again, the fertility of the surface is renewed and the same exhaustive system of growing wheat, year by year, may be pursued for a long period with impunity. It is true, in fact, that for several of the first years, at all events, manuring the soil would do much more harm than good."

The following are extracts from His Excellency the Earl of Dufferin's remarks at Winnipeg in 1877 :—

Extract from a Speech of the Earl of Dufferin.

"From its geographical position, and its peculiar characteristics, Manitoba may be regarded as the keystone of that mighty arch of sister provinces which spans the continent from the Atlantic to the Pacific. It was here that Canada, emerging from her woods and forests, first gazed upon her rolling prairies and unexplored North-West, and learnt, as by an unexpected revelation, that her historical territories of the Canadas, her eastern seaboard of New Brunswick, Labrador and Nova Scotia, her Laurentian lakes and valleys, corn land and pastures, though themselves more extensive than half-a-dozen

European kingdoms, were but the vestibules and ante-chambers to that till then undreamt of Dominion, whose illimitable dimensions alike confound the arithmetic of the surveyors and the verification of the explorer.

"It was hence that, counting her past achievements as but the preface and prelude to her future exertions and expanding destinies, she took a fresh departure, received the afflatus of a more imperial inspiration, and felt herself no longer a mere settler along the banks of a single river, but the owner of half a continent, and in the magnitude of her possession, in the wealth of her resources, in the sinews of her material might, the peer of any power on earth."

As respects the personal effect caused by the winters of the North-West, we cite the following testimony from a speech delivered by His Excellency the MARQUIS OF LORNE on the occasion of his visit to Winnipeg:

From a Speech of His Excellency the Marquis of Lorne.

"With the fear of Ontario before my eyes I would therefore never venture to compare a winter here to those of our greatest Province, but I am bound to mention that when a friend of mine put the question to a party of sixteen Ontario men who had settled in the western portion of Manitoba, as to the comparative merits of the cold season of the two provinces—fourteen of them voted for the Manitoba climate, and only two elderly men said that they preferred that of Toronto."

Viscount MILTON and Dr. W. CHEADLE, who crossed the Rocky Mountains, also state in their work published in 1866:—

From Viscount Milton and Dr. Cheadle's Work.

"We let loose our horses in the beginning of winter at the Belle Prairie; although they were very thin and the snow had begun to fall, they became like balls of fat. The pasture is so nourishing that even in winter, when they have to seek for food beneath the snow, the animals fatten rapidly, provided that they can find the wood where they may shelter themselves from the severity of the temperature. Milch cows and oxen near the Red River are in a condition almost as fine as that of stall-fed cattle brought for exposition to Baker Street."

THE GREAT WHEAT ZONE.

Extracts from a Letter of U. S. Consul J. W. Taylor.

"A comparative statement of temperatures at St. Paul, Winnipeg and Battleford, for the first months of the current year, including April, having been published by me and noticed in the *Pioneer Press*, I assume that your readers will be interested in a similar statement for the year ending July, 1879, to which I have added the monthly observations at Toronto.

"These positions are as follows :

	N. Lat.	W. Lon.
Toronto.....	43-39	79-23
Saint Paul.....	44-52	93-05
Winnipeg.....	49-50	96-20
Battleford.....	52-30	109-00

"It will be convenient to refer to latitudes as Toronto, 44 degrees ; St. Paul, 45 degrees ; Winnipeg, 50 degrees ; Battleford, 53 degrees. The place last named is situated on the Saskatchewan River, and is the capital of the North-West Territory of Canada, as the vast district west of Manitoba (longitude 99 degrees) to the Rocky Mountains is now known geographically and politically. Battleford is the residence of the Canadian Lieutenant-Governor Laird, and has its newspaper, the *Saskatchewan Herald*.

"I will further premise that Sergeant Price, of the Canadian Mounted Police at Battleford ; Mr. James Stewart, of the Canadian Signal Service at Winnipeg ; Sergeant Cone, of the United States Signal Corps at St. Paul, and Mr. G. E. Rainboth, Dominion Civil Engineer, of Quebec, have kindly furnished the materials of the following :

TABLE OF MEAN TEMPERATURES.

	Toronto.	Saint Paul.	Winnipeg.	Battleford.
August.....	66.38	72.00	67.34	67.79
September.....	58.18	60.06	52.18	47.10
October.....	45.84	46.03	35.84	34.52
November.....	36.06	38.03	30.66	28.66
December.....	25.78	19.03	11.97	7.43
January.....	22.80	16.03	-6.10	-0.45
February.....	22.74	15.02	-12.32	-10.25
March.....	28.93	33.01	14.14	16.84
April.....	40.72	50.04	39.10	46.70
May.....	51.74	58.07	53.13	53.35
June.....	61.85	67.09	63.20	60.35
July.....	67.49	73.05	68.19	63.95
Yearly means.....	44.04	45.61	36.67	36.46

"A statement of mean temperature during the agricultural season from April to August inclusive, exhibits the following proportions :— Toronto, 57 degrees 64 minutes ; St. Paul, 65 degrees 5 minutes ; Winnipeg, 58 degrees 19 minutes ; Battleford, 58 degrees 53 minutes. Thus it will be seen that the climate, in its relation to agriculture, is warmer in Manitoba and over territory seven hundred miles north-west, than in the most central districts of Ontario ; while St. Paul, in latitude 45 degrees, is 7 degrees 40 minutes warmer than the vicinity of Toronto in latitude 44 degrees.

"I hope soon to be in possession of similar statistics at Fort McMurray on the Athabasca river, and Fort Vermillion on Peace river, respectively 1,000 and 1,200 miles due north-west of Winnipeg, and I have full confidence that the climate at these points will not be materially different from that of Battleford. The altitude of the Athabasca

and Peace River district is less and the trend of the Pacific winds through the Rocky Mountains is more marked than at Battleford. It was on the banks of the Peace River, well up in latitude 60 degrees, that Sir Alexander Mackenzie records on the 10th of May the grass so well grown that buffalo, attended by their young, were cropping the uplands.

"But I find my best illustration that the climate is not materially different west of Lake Athabasca, in latitude 60 degrees, than we experience west of Lake Superior in latitude 46 degrees, in some personal observations of the northwestern extension of wheat cultivation. In 1871, Mr. Archibald, the well-known proprietor of the Dundas Mills, in southern Minnesota, visited Manitoba. He remarked that the spring wheat in his vicinity was deteriorating—softening, and he sought a change of seed, to restore its flinty texture. He timed his visit to Winnipeg with the harvest and found the quality of grain he desired, but the yield astonished him. 'Look,' said he, with a head of wheat in his hand, 'we have had an excellent harvest in Minnesota, but I never saw more than two well-formed grains in each group or cluster, forming a row, but here the rule is three grains in each cluster. That's the difference between twenty and thirty bushels per acre.' More recently, Prof. Macoun, the botanist of the Canadian Pacific Railway survey, has shown me two heads of wheat, one from Prince Albert, a settlement near the forks of the Saskatchewan, latitude 53 degrees, longitude 106 degrees, and another from Fort Vermillion, on Peace River, latitude 59 degrees, longitude 116 degrees, and from each cluster of the two I separated five well-formed grains, with a corresponding length of the head. Here was the perfection of the wheat plant, attained according to the well known physical law, near the most northern limit of its successful growth.

"Permit another illustration on the testimony of Prof. Macoun. When at a Hudson Bay post of the region in question—either Fort McMurray, in latitude 57 degrees, or Fort Vermillion, in latitude 59 degrees, and about the longitude of Great Salt Lake, an employee of the post invited him to inspect a strange plant in his garden, grown from a few seeds never before seen in that locality. He found cucumber vines planted in April in the open ground, and with fruit ripened on the 20th of August. * * * *

"I will venture to illustrate the climatic influences which control the problem under consideration, by some citations from 'Minnesota: Its place among the States, by J. A. Wheelock, Commissioner of Statistics,' which, though published in 1860, is all the more an authority for the confirmation of twenty years. The general law of limitation to the profitable cultivation of wheat is thus luminously stated:—

"'The wheat producing district of the United States is confined to about ten degrees of latitude and six degrees of longitude, terminating on the west at the 98th parallel. But the zone of its profitable culture occupies a comparative narrow belt along the cool borders of

the district defined for inland positions by the mean temperature of fifty-five degrees on the north and seventy-one degrees on the south, for the two months of July and August. This definition excludes all the country lying south of latitude forty degrees, except Western Virginia, and north of that it excludes the southern districts of Pennsylvania, Ohio, Indiana, Illinois and Iowa, while it includes the northern part of these States, Canada, New York, Western Virginia, Michigan, Wisconsin, Minnesota and the Red River and Saskatchewan valleys. In general terms, it may be stated that *the belt of maximum wheat production lies immediately north of the districts where the maximum of Indian corn is attained.*"

"The argument for North-West British America, as well as for the State of Minnesota, cannot be more accurately epitomized than by the following summary of Commissioner Wheelock:—

"1. That physical and economical causes restrict the limits of wheat culture to the seats of its maximum production, in less than one-third of the States of the Union, within a climatic belt having an estimated gross area of only 260,000 square miles, from which nine-tenths of the American supply of bread, and a large and constantly increasing amount of foreign food must be drawn.

"2. That within this zone, the same climatic and other causes tend to concentrate the growth of wheat in the upper belt of the north-western States, always preferring the best wheat districts.

"3. That Minnesota and the country north-west of these wheat districts having the largest areas yield the most certain crops and the best and healthiest grains." * * * *

"Will the great interior of the continent contribute to our exportations of wheat and its flour? I refer to the territorial organizations of Montana, Idaho, Wyoming, Colorado, Utah and Nevada. Let us take the most favored of all, Montana. Grand as are its resources I am constrained to believe that only one-thirtieth of its surface is within reach of the unavoidable condition of irrigation, and that the mountains with their mineral wealth and the uplands as grazing grounds for cattle and sheep, will be the chief theatres of industrial activity. After careful inquiry in 1868, as United States Commissioner of mining statistics, I committed myself to the following statement: 'The area of the territory (Montana) is 146,689 35-100 square miles, equal to 93,881,184 acres—nearly the same as California, three times the area of New York, two and a half that of New England, and yet no greater proportion is claimed by local authorities as susceptible of cultivation than one acre in thirty, or a total of 3,346,400 acres. Of course a far greater surface will afford sustenance to domestic animals. The limit to agriculture, in Colorado and New Mexico, is the possibility of irrigation.' In a recent report of the National Geological Commission, I observe that Major J. W. Powell estimates the amount of land in Utah (with 84,476 square miles) that can be redeemed by the utilization of streams, but without

the construction of reservoirs, as about 1,250,000 acres. How far east this necessity of irrigation exists, I am not competent to determine. It was formerly fixed at longitude 98 degrees by Professor Henry, of the Smithsonian Institute, but 101 degrees or three degrees further west, especially west of Manitoba, is probably more accurate. Upon the limited areas available for agriculture, the crops are very remarkable, but their volume, of course, commanding the highest prices, will be absorbed by miners and herdsmen in addition to the demand of towns and cities. In this connection I should not omit to add that the localities of Central Canada on the line 1,600 miles north-west from St. Paul—Battleford, Prince Albert, Fort McMurray, Fort Vermillion, including the better known Fort Edmonton, are all west of longitude 105 degrees, and are in direct range with Denver City, Great Salt Lake, and even Virginia City; yet, at none of the more northern positions is there any necessity of irrigation. It is the crowning feature of the 'fertile belt' which broadens with reduced altitudes and constant air currents from the Pacific coast, that the immense trapezoid, whose apex is bounded on the Mackenzie, has a sufficient quantity of summer rains for all the purposes of agriculture as organized in the Atlantic and Mississippi States."

The following is a letter from an Irish farmer settled near Brandon in Manitoba, addressed to Mr. Thomas Connolly of Dublin. This settler seems to have found things sufficiently pleasant:

Letter from an Irish Settler.

"DEAR SIR—

"I desire to inform you that I have located on a farm of 640 acres, 2½ miles south of Brandon, 400 acres of which I have had under cultivation this season. I arrived at the town site of Brandon on the 28th of May, 1881, and commenced to break my land on the 5th of June, doing the most part of the work by contract, paying 4 dols. per acre for breaking, and 3 dols. 50c. for back-setting. This, as you know, left it ready for the harrow. I sowed 350 acres of oats, 20 acres of wheat—the balance in roots and other crops. I commenced to sow on the 5th of May, and commenced to cut my wheat on the 26th of August, going on until the whole of my wheat and oats were cut—this season being late, as you see from the time I commenced to sow and cut. Seeding time usually begins about the 10th of April, and harvest from the 1st to the 19th of August. I have to now threshed about 14,000 bushels of oats and find the yield 58 bushels per acre. The wheat will yield 30 bushels per acre. These are actual figures and not got up. Oats sell very readily at 50 cents per bushel. You can see from this that I will have my entire expenditure returned, with 100 per cent, by the first crop, so that I am not farming for fun, but to make money, and I think I am succeeding. There is no difficulty in

a man farming here if he has ordinary energy and intelligence. A good stock of the former is even better in my opinion than an overstock of capital. Many young men from towns and cities that have come out this season with a little money appear anxious to learn farming as they call it, and give some of our cunning ones from 400 dols. to 600 dols. and their labour for one year to teach them nothing, as you know already. Any of the above classes that have come to me I have advised to go on to their land and work, and if they had no confidence in themselves, to go and hire for moderate wages for a year with some good farmer and keep their money. Now as to the price of labour: it was pretty high when you were here, but it is higher now. When I commenced seeding I hired my men at 26 dols. and board per month for the season, excepting the harvest month, for which I paid them thirty dollars each. Extra men for the harvest I paid two dollars per day with board. The men that I have now at work threshing I am paying 2 dollars 50c. and board. This of itself will explain to you the demand for labour. My root crop is still in the ground for want of labour, notwithstanding the above high rates. The labourers on the Canadian Pacific Railroad work get 2 dollars 25c., and even higher. There is a good deal of work on the streets of Brandon, at which labourers are getting 2 dollars 50c. to 2 dollars 75c. and their board only cost them from 4 dollars 50c. to 5 dollars 50c. a week. Carpenters are getting from 3 dollars to 4 dollars a day, and you have to take off your hat to get them at that. You cannot imagine the hurry and bustle there is in this country compared to what there had been when you were here. We have the country beyond a doubt; all we want is a good class of emigrants; we cannot have an overstock of farmers, farm labourers, and mechanics. Yours truly,

“CHARLES WHITEHEAD.

“Brandon, Manitoba, Oct. 11th, 1882.”

Prof. MACOUN states in his recently published work on Manitoba and the North-West:—“The general conclusions which I arrived at from my explorations of 1872, and 1875, were: 1st., That as there was but one flora common to the region extending from eight to twelve degrees of latitude, or as far north as 60°, and as that flora *required a high summer temperature* for its existence, the thermometer would be found to show a correspondingly even distribution of heat throughout the whole district. 2nd., That exceptional or special conditions must exist to produce that high and even distribution of heat discovered as ranging over so great an area.”

The same writer further says:—“It was long ago asserted as a principle by Geologists, that land in quantity situated to the southward of latitude 40° North, very materially raises the temperature of lands lying to the north of such parallel. (Sir C. LYELL). To the expression ‘land in quantity,’ I would add, *when its character is that of a desert or arid nature*. Another maxim is thus laid

" down by a well-known writer on American Climatology (BLODGETT)
 " " that high arid plains are indicative of great summer heat, of an
 " " arid atmosphere, and of little rain or snow-fall'. Now the con-
 " ditions required to test the accuracy of both these propositions are
 " presented in the position occupied by the North-West Territory.
 " South of our boundary, within the United States, lies a vast tract
 " of land, generally arid or desert, of which at least 500,000 square
 " miles are embraced in a plateau which has a general level of 6,000
 " feet above the sea. At Laramie City, in lat. 42° , it is about 7,000
 " feet above sea level, thence northward it rapidly falls off, so that
 " when it reaches our boundary in lat. 49° at Pembina, it is consi-
 " derably under 1,000 feet. At the base of the Rocky Mountains it
 " is under 4,000 feet. From the boundary, the plain extends far to
 " the north and only terminates at the Arctic Sea. In such a wide
 " range of latitude it might well be expected that a considerable
 " difference of temperature would be found. The following table,
 " however, shows the temperature as being wonderfully uniform.
 " (See Meteorological Report, 1878):

PLACE.	LAT.	LONG. W.	JUNE.	JULY.	AUG.	MEAN OF SUM. MOS.
Winnipeg	49.53	97.07	59.2	65.8	63.3	62.8
Fort McLeod	49.39	113.42	60.8	63.3	57.0	60.3
Norway House	54.00	98.00	54.9	63.5	61.2	59.9
Fort Simpson	61.52	121.35	58.8	63.4	63.2	61.8

" In the same parallels of latitude" in Europe, the temperature is
 " recorded as follows. (See Blodgett):

PLACE.	LAT.	JUNE.	JULY.	AUGUST.	MEAN OF SUM. MOS.
Penzance, S. W. England	50.08	59.5	62.1	61.1	60.9
Cracow, in Poland	50.04	64.0	65.8	64.9	64.9
Königsberg, in Prussia	54.42	57.4	62.6	61.7	60.6
St. Petersburg, in Russia	59.56	58.2	62.7	60.8	60.6

The principles laid down in the above extract are of the greatest importance, and lead to a clear understanding of a series of facts, which will be hereinafter stated; and it cannot be too well remembered that the height of land of what is called the plateau of North America, seven degrees south of the Manitoba frontier, is 6,000 and 7,000 feet above the ocean; while at the boundary it is under 1,000 feet, the valley then still trending to the north.

The same writer further says:—"Tracing these isothermals still further north, the line of greatest heat passes near Fort Vermillion in lat. $58^{\circ} 24'$ and long. $116^{\circ} 30'$ west" (that is, over nine degrees north of the Manitoba boundary). "I may mention that at this point I found barley cut on August 6th, 1875, and wheat almost ripe." And again, "From the west coast the isothermal lines commence to turn northward from the Gulf of California, and for a time skirt the western side of the Rocky Mountains; but on reaching the low point of the plain between lat. 41° and 45° , they turn to the east, cross the mountains, and strike the Dominion boundary on the 115^{th} meridian. These westerly currents, named the 'Chinooks,' have been known to cause a rise in the temperature of 60° in a few hours. When in that country I enquired from a Half-breed about their effect on the snow. His reply was, 'the Chinooks' 'lick up snow, water and all.' After crossing the Rocky Mountains the thermometric current of the west meets that of the east at or about the Hand Hills in lat. $51^{\circ} 20'$, long. 112° . There, in 1879, I found that for days together, during August, the thermometer in the shade registered from 87° to 92° F."

Our "Guide" will see from this report that it is a fact the "Chinook winds" have their home in the Canadian North-West; and the transformations of temperature they cause is indeed one of the wonders.

Mr. Macoun goes on to say that these conditions confer "the blessings of a climate not only exceptional as regards character, but productive of results to the agriculturist which, I believe, are unsurpassed in any part of the world."

We find precisely similar positions laid down in the work of Mr. BLODGETT, a standard writer on the Climatology of America, and he shows that the conditions which prevail in Europe and contiguous parts of the continent of Asia, repeat themselves on this continent.

Prof. Macoun summarizes this doctrine in the following words, by referring to the cold of winter, as well to the north of the Manitoba frontier as the south, but more particularly to the south, on the more elevated American plains:

"On the withdrawal of the southern warm currents (in the winter), other currents from the north and from the west follow them up, particularly on the east side of the Rockies, and establish the prevailing north-west winter winds, which being affected by the temperature of the Arctic regions on the one hand, and by the mountains on the other, bring the minimum line of cold far to the south. Were the American Desert an inland sea, the summers of our plains would lose their exceptional character, and our winters would be like those of Eastern Europe."

The seasons are well marked. The Rev. Dr. Bryce, a resident of Winnipeg, states in a letter elsewhere published in this pamphlet, that when the month of January comes, the common expression is :—"The back of the winter is broken ;" and afterwards there are two or three months of almost continuously brilliant unclouded skies, the snow going off in March or early in April. The spring at once comes ; and ploughing begins, from the first to the middle or latter part of April, which is a fortnight earlier than in the Ottawa region of the Province of Ontario. The spring is short. The summer months are, part of May, June, July, August and September. Autumn lasts until November, when the regular frost sets in. The harvest takes place in August. This is a statement of the well-known facts as respects the seasons.

The rain-fall of the Canadian North-West is as favourable as the other conditions mentioned. As a rule it is abundant during the growing season, while there is dry weather during the ripening and harvesting season, until the close of the year. There may be of course exceptional years, as in all countries, but the general fact is as stated, and it arises from well defined conditions. It is of the greatest importance for the agriculturist.

As the importance of the testimony of an American writer so eminent as Mr. Blodgett can scarcely be over-estimated in this connection, the following extract is republished from his work on Climatology. It contains besides, matter of so much interest that it cannot be too carefully read and considered :—

" By reference to the illustration of the distribution of heat, we see
 " that the cold at the north of the great lakes does not represent the
 " same latitude further west, and that beyond them the thermal lines
 " rise as high in latitude, in most cases, as at the west of Europe.
 " Central Russia, the Baltic districts and the British Islands, are all
 " reproduced in the general structure, though the exceptions here
 " fall against the advantage, while there they favour it through the
 " influence of the Gulf Stream.

" Climate is indisputably the decisive condition, and when we
 " find the isothermal of 60° for the summer rising on the interior
 " American plains to the 61st parallel, or fully as high as its
 " average position for Europe, it is impossible to doubt the existence
 " of favourable climates over vast areas now unoccupied.

" This favourable comparison may be traced for the winter also,
 " and in the average for the year. The exceptional cold for the
 " mountain plateaux, and of the coast below the 43rd parallel, masks
 " the advantage more or less to those who approach these areas
 " from the western part of the Central States, and from the coast of

" California ; but though the distant mountain ranges remain high at the north, the width of their base, or of the plateau from which they rise, is much less than at the 42nd parallel. The elevated tracts are of less extent, and the proportion of cultivable surface is far greater.

" It will be seen that the thermal lines for each season are thrown further northward on passing Lake Superior to the westward, in the charts of this work, than in those of the military report prepared by the author..... A further collection and comparison warrants the position now given to the thermal lines, placing them further northward than before, and extending them in a course due north-west from Lake Superior to the 58th parallel. For the extreme seasons, winter and summer, this accurate diagonal extension of the thermal lines across the areas of latitude and longitude is very striking. The Buffalo winter on the upper Athabasca at least as safely as in the latitude of St. Paul, Minnesota ; *and the spring opens at nearly the same time along the immense line of plains from St. Paul to Mackenzie River.*

" The quantity of rain is not less important than the measure of heat to all purposes of occupation ; and for the plains east of the Rocky Mountains there may reasonably be some doubt as to the sufficiency ; and doubts on this point whether the desert belt of lower latitudes is prolonged to the northern limit of the plains. If the lower deserts are due to the altitude and mass of the mountains simply, it would be natural to infer their existence along the whole line, where the Rocky Mountains run parallel and retain their altitude ; but the dry areas are evidently due to other causes primarily, *and they are not found above the 47th parallel in fact.* It is decisive on the general question of the sufficiency of rain, to find the entire surface of the upper plains either well grassed or well wooded ; and recent information on these points almost warrants the assertion that there are no barren tracts of consequence after we pass the bad lands, and the Coteau of the Missouri. Many portions of these plains are known to be peculiarly rich in grasses ; and probably the finest tracts lie along the eastern base of the mountains, in positions corresponding to the most desert. The higher latitudes certainly differ widely from the plains which stretch from the Platte southward to the Llano Estacado of Texas, and none of the references made to them by residents or travellers indicate desert characteristics. Buffalo are far more abundant on the northern plains, and they remain through the winter at their extreme border, taking shelter in the belts of woodland on the upper Athabasca and Peace Rivers. Grassy savannas like these necessarily imply an adequate supply of rain ; and there can be no doubt that the correspondence with the European plains in like geographical position — those of Eastern Germany and Russia — is quite complete in this respect. If a difference exists it is in favour of the American plains, which have a greater proportion of surface waters, both as lakes and rivers.

* * * * *

"Next, the area of the plains east of the Rocky Mountains, is not less remarkable than the first for the absence of attention heretofore given to its intrinsic value as a productive and cultivable region, within easy reach of emigration. This is a wedge-shaped tract, ten degrees of longitude in width at its base, along the 47th parallel, inclining northwestward to conform to the trend of the Rocky Mountains, and terminating not far from the 60th parallel in a narrow line, which still extends along the Mackenzie for three or four degrees of latitude, in a climate barely tolerable. Lord Selkirk began his efforts at colonization in the neighbourhood of Winnipeg as early as 1815, and from personal knowledge he then claimed for this tract a capacity to support thirty millions inhabitants. All the grains of the cool temperate latitudes are produced abundantly. Indian corn may be grown on both sides of the Saskatchewan, and the grass of the plains is singularly abundant and rich. Not only in the earliest exploration of these plains, but now they are the great resort for buffalo herds, which with the domestic herds, and horses of the Indians and the colonists remain on them and at their woodland borders throughout the year.

"The simple fact of the presence of these vast herds of wild cattle on plains at so high a latitude, is ample proof of the climatological and productive capacity of the country. *Of these plains and their woodland borders the valuable surface measures fully five hundred thousand square miles.*"

So much for the principles affecting the conditions of climate in the Canadian North-West. It only further remains to show that the products coincide with such conditions. Proof of this is also found in facts given in preceding pages of this pamphlet, and notably on the American authority of the United States Consul [Mr. Taylor] at Winnipeg. Nothing can be more striking than the statement of facts contained in his letter, and they are as unquestioned as they are unquestionable.

The success of the cattle ranches in the Canadian North-West, not far from the base of the Rocky Mountains, may be mentioned as another corroborative fact. These ranches were commenced in 1881; and the cattle that were placed in them, notwithstanding the fact that they had been driven over long distances of thousands of miles; and, therefore, not naturally in the most favourable condition for the experiment of standing their first North-West winter, have yet wholly equalled the expectations of their projectors. The cattle did well during the winter, the great bulk of them having been kept outside, and very few housed, with the increase in numbers expected. There

not be a question that these ranches will become important sources of cattle supply, from which cattle in large numbers will find their way to the eastern markets. A country in which cattle live in the open during the winter, and from which they can obtain nourishment from under the snow from the nutritious grasses which have grown during the summer, may have a severe winter climate, tempered, however, by the "Chinooks;" but it can scarcely be called "Arctic." There is no getting over the evidence of facts.

The Canadian Pacific R'y Co. have made a collection of statistics through the agency of the Station Masters along their lines of railway in Manitoba and the North-West, a practice which is quite common with the Railway Companies on this Continent. The results as shown in Manitoba and the North-West for the season of 1882 are simply astonishing. The cereals grow with a strength, luxuriance, and profusion of yield, which are the wonder of newcomers; and no manure is thought of. The soil consists of a black mould resting on a clay sub-soil for the most part. As a rule, very little labour is bestowed upon it. With ordinary good farming wheat will yield an average of thirty bushels to the acre, and forty may be obtained. Oats will give from sixty to seventy-nine bushels. The straw ordinarily grows 5 feet 7 inches in length, with thirteen or fourteen stems to a single grain, having proportionately long and heavy heads of grain. The leaf that falls over from a growth of this kind measures 1 and 1-16th of an inch in width, the colour during the period before ripening being an intensely dark green. Barley and other grains thrive relatively as well, and splendid crops of flax may be grown on the first breaking. The hop has not been cultivated, but is found wild on the prairie in wonderful luxuriance. All root crops do well, potatoes and turnips growing to an enormous size, and of the best quality. The cabbage and other vegetables also grow to a large size, and of the best quality. In fact the productiveness of the Canadian North-West answers the conditions of a rich virgin soil and favourable climate.

Here is proof of this fact, in the following letter from a great English seeds house, Messrs. Sutton & Sons:—

"READING, December 21st, 1880.

"We were honoured by the Canadian Government forwarding for exhibition on our stand at the Smithfield Club Cattle Show, 1880, a

collection of roots, etc., grown in Manitoba and Ontario, of the following weights, when harvested:—

Squash.....	313	"s.
Long Red Mangel.....	75	"
Long Yellow Mangel.....	65	"
Yellow Globe Mangel.....	60	"
Field Pumpkin.....	37	"
Citron.....	30	"

"These enormous specimens proved objects of great interest to the British farmers, and we believe the weights far exceed any on record.

"(Signed), SUTTON & SONS."

The Canadian Pacific Railway is being pushed forward with surprising rapidity. It is already opened for traffic for 660 miles west of Winnipeg, and in 1883 it will reach the base of the Rocky Mountains. The line is also open east of Winnipeg for a distance of over 400 miles, making a connection at Thunder Bay with Lake Superior and the St. Lawrence system of navigation connecting with the Ocean.

Population is rushing in as might be expected, in such conditions of climate, soil and railway development. Between 50,000 and 60,000 settlers from the older Provinces of Canada, the United States, the United Kingdom, and parts of Europe, have gone in during 1882; and it is expected that the influx will be far greater in 1883, the territory to be occupied being about as large as the whole Continent of Europe, and the equivalent on the Continent of America of that of Europe north of Paris, comprising the most powerful kingdoms and empires on the globe.

This great country is also rich in coal and minerals, and has the most remarkable water system on the Continent of America. Its resources, as truly stated by the late Lord BEACONSFIELD, are practically "illimitable."

As respects the personal effects produced by the warmth of summer, and the cold of winter, we will make two quotations: one from Mr. R. H. Anderson, of Listowel, Co. Kerry, Ireland. He says:—

"At home, excessive heat is generally accompanied by oppressive-
ness with its attendant weariness and inertia; and cold, as a rule,
"with dampness, which makes it raw and piercing. Now this is not
"the case in Manitoba or the North-West. The heat at 100° was
"undoubtedly very intense, but—and I speak from personal expe-
"rience—without sultriness. I perspired freely, but otherwise felt
"no inconvenience, and had energy enough for any amount of work.
"This was an unusual degree of heat; the summer mean is, I believe,
"about 70°. Usually during summer there is a pleasant breeze, and

"the higher the thermometer stands the more likely is there to be a breeze. No matter how hot the day, the night is sure to be cool. In winter the cold is very great, but nothing like what it is at home in proportion to the degrees of frost; if it were, animal life would cease, for the thermometer sometimes sinks to 40° and 50° below zero—just imagine what that would mean in England! but when it does so it is certain to be accompanied by a bright and perfectly still atmosphere and a warm sun. However, as a rule, it stands at from 10° to 15° . As I had not an opportunity of experiencing it myself, I was not content with the testimony of the ordinary settler concerning it, but had that of such men as the Bishop of the Saskatchewan and clergymen of various denominations, as well as bankers and others, on whose opinions I could rely. All agreed in saying that one feels no colder when the thermometer stands at 40° than when it is at 10° below zero, and that winter is a delightful part of the year. Numbers of people from Ontario said that the climate of Manitoba compared favourably with that of Ontario."

The second quotation, on the point of the dryness of the air as affecting cold, is from an American authority, Mr. J. A. Wheelock, Commissioner of Statistics in Minnesota; the conditions in this respect being the same in both Manitoba and Minnesota. He says:—

"The dryness of the air in Minnesota permits a lower range of temperature without frosts than in moist climates. The thermometer has frequently been noticed at 20° without material injury to vegetation. In the damp summer evenings of Illinois and Ohio, for example, the heat passes off rapidly from the surface of the earth and from plants. Frosts develop under such circumstances at a comparatively high temperature. The constant bath of moisture has softened the delicate covering and enfeebled the vitality of plants; and thus a fall of the thermometer which in Minnesota would be as harmless as a summer dew, in Ohio would sweep the fields like a fire."

The facts in the preceding pages are quite sufficient to show the value which may be placed upon our "Reliable Guide to the North-West;" and they are quite sufficient, moreover, to show how foolishly absurd is the statement that the climate of Manitoba consists of "seven months of Arctic winter, and five months of cold weather." But as this gross libel is clearly published and circulated by a great Railway and Land Corporation in order to gain a mean business advantage by deception, with the object of "promoting rival interests—one of the least worthy of human motives—it is fitting to push this enquiry a little farther.

Our "Guide" tells us that the Red River water "sets back and covers all the surrounding country, drowning stock, floating away

"dwellings, buildings and fences, and driving the farmers off to the "tops of hills to save their lives." The "tops of hills" would certainly be a very convenient place to flee to in such a dire calamity; but unfortunately there are no hills! The refuge so kindly devised is as fanciful and groundless as the rest of the statement.

It is true that the Red River overflowed its banks in the spring of 1882, but as a rule, the swollen waters only extended to a very narrow strip of country. The farmers beyond that were not in the slightest affected, and the spring was favourable for their operations. But these overflowings of the Red River are not numerous. His Grace Archbishop TACHÉ, who has lived for so many years in the country, and whose evidence is unimpeachable, states that the records only mention three previous to 1882 within a period of more than half a century, viz: one in 1826, one in 1852, and one in 1861. But the fact of rivers overflowing their banks is unfortunately not confined to Manitoba. As these lines are written [in November, 1882] we have telegraphic accounts of numerous rivers in England and parts of Europe being swollen and doing great damage by overflow, over large districts; while in the United States, the destruction from this cause, say by the Mississippi for instance, is sometimes on a much more gigantic scale. It is not long since the newspapers were filled with accounts of a breadth of country fifty or sixty miles in width, and many hundreds of miles in length, being devastated by an overflow of that Father of Waters; many lives of human beings and of animals being destroyed, the most painful miseries inflicted, and property by millions swept away. Nothing of this kind is pretended to be alleged of the Red River overflowings even by our ready "Guide."

There is one further point:—Archbishop TACHÉ pertinently states in his letter, "that the same Red River has flooded oftener "at some points where it divides the State of Minnesota from Dakota "Territory, and at such points I know of three floods against one "near Winnipeg."

Could it have been possible that our "Reliable Guide," when declaiming against Manitoba had the Eden of Dakota in his mind? The following is a description in a telegraphic despatch published in a newspaper of April 8, 1871, from Yankton, Dakota:—

"The ice gorge here broke last night. Two hundred buildings had been partially submerged and much damage was done. A steamer was carried away with the gorge for a mile and stranded on the railway track. Two hundred persons here were rescued from the sub-

merged farming districts. The fuel supply has been reduced to a minimum. Many kinds of provisions are running short. The freshet swept away thousands of cords of wood."

So here we have two hundred buildings submerged; a steamer carried away and stranded on the railway track, with other great damage done! And still further, in the newspapers of April 14 of the same year, there is the following further description of the state of things in that Dakota in which the Northern Pacific Railway is interested:—

"The Missouri is gradually subsiding. Ice is piled to a height of ten to thirty feet along the bank and on the bars and at the bottoms. Yankton is filling with refugees from the low-lands. Outside help is needed, as the resources of the citizens are not adequate. Thousands of people are homeless, all they possessed having been swept away. Nearly all the stock on the lowlands, consisting of hundreds of thousands of head, has been drowned. Farm houses are submerged or floating about in the water. At Green Island of twenty houses but one remains, and the ice is from ten to twenty feet deep. The bottom from here to the Big Sioux, sixty miles in length and from five to twenty miles in width, is still under water. Yankton parties are still out in yawls bringing in the people. The town is almost destitute of fuel and short of provisions. Winter still holds on, increasing the suffering of the homeless families. Yankton can furnish shelter for about one thousand, and is making great effort to supply clothing, fuel and provisions from a limited store. As soon as the gorge breaks boats can be sent below for supplies. All railways north and west are snowed in. Eight steamers are lying high up on the ice and far inland. Losses to property in general are very great. The season of floods has only begun. The entire Missouri slope is buried in snow."

Here is something very serious, great damage done, outside help needed, the resources of the inhabitants being inadequate to meet the disaster, thousands of people rendered homeless, all they possessed swept away, "hundreds of thousands" of cattle drowned, all railways north and west snowed in, eight steamers high and dry on the ice, far inland, the season of floods moreover then only begun, and the entire Missouri slope buried in snow! It is a dreadful picture, but after all, there may be some corn in that Egypt even yet. Nobody however, would have thought of referring to it, if the reference had not formed the most natural and fitting answer, to an unnecessary and most unwarranted attack on Manitoba.

We end as we began: the dying advice of the pedler-preacher to his son, is the most fitting lesson of morality that can be commended to the consideration of this "Reliable Guide."

APPENDIX.

The following letter was received after the preceding pages had been sent to press, and is valuable as containing United States testimony. The writer of the letter is the Attorney-General of the State of Wisconsin; to which is added a corroboration from the Governor of that State. From geographical position, the relations of Wisconsin have natural sympathy with the North-West. Nothing can be more frank than the statements of the Attorney-General. He makes a clear distinction between what he has seen and knows himself, and what he has heard; but the observations and the testimony coincide:—

Letter from the Attorney-General of the State of Wisconsin.

STATE OF WISCONSIN.

Office of Attorney-General.

MADISON, Sept. 23rd, 1882. }

DEAR SIR,

Yours of the 8th inst., asking me to give expression to the opinion formed of the country and its resources, from my recent excursion into the British Dominion, to your city and vicinity, was duly received. A pressure of business has prevented an earlier reply.

My visit was made under the most favorable circumstances,—bright skies and pleasant weather, with a joyous company surrounding me,—and I may not have seen or comprehended the disadvantages, if any, which attend the emigrant who seeks a home within your borders, since I saw nothing that did not indicate thrift and prosperity. The city of Winnipeg is a marvel of modern times; its rapid growth, its large and costly business blocks filled with the choicest and richest goods of a metropolitan city, its fine dwellings with their beautiful surroundings, the thousand tents sheltering the immigrant while engaged in erecting the more substantial place of abode, and the many long and heavy laden trains which came and went, impressed me with the conviction that the country surrounding must be rapidly improving and settling up. The many and large wheat fields which I saw in the Red River Valley certainly, this year, indicate that for wheat raising, no place in the North-West can excel it.

So far as one could judge from a hasty view of the country surrounding your city, it seems to me that it must attract the emigrant hither, who is seeking a new home in the far west.

Of the climate, but little can be said from actual observation of a couple of days; but from conversations had with intelligent gentlemen who have spent some years in your city, I am led to believe that it is favorable to agricultural pursuits, and withal healthful. On the whole, I formed a very favorable opinion of the resources and productiveness of your country.

I have the honor to be,

Yours very truly,

(Signed), L. F. FRISBY,

Atty.-Genl.

Wis.

W. C. B. GRAHAME, ESQ., }
&c., &c., &c., }
Winnipeg, Manitoba. }

Corroboration by the Governor of the State.

Executive Office,

MADISON, Wis., Sept. 23, 1882. }

I fully concur with General Frisby in the foregoing statement.

(Signed), J. M. RUSK,

Governor.

Still later, and while the sheets were in the printer's hands, the following letter was received from the Right Rev. the Lord Bishop of Rupert's Land:—

Letter from His Lordship the Bishop of Rupert's Land.

BISHOP'S COURT,
Winnipeg, Manitoba,
Nov. 24, 1882.

"SIR,—

"It would be most discreditable to the Directors of the Northern Pacific Railway, if the extract enclosed from the 'Settler's Guide to the American Tourist' was put forth with their knowledge and authority. It is simply from beginning to end one continued misstatement. Fancy tributaries of the Red River rising in the Rocky Mountains and the summer in Manitoba being cold.

"There is usually a considerable degree of cold for about four and a half months in winter, but most people enjoy the weather, and while the cold is very little more than in Minnesota, we are free of the disastrous storms that often rage in that State.

"I have been seventeen years in Manitoba and never knew the Red River overflow its banks so as to drown stock, float away buildings, or drive any farmer from his farm. The highest water in any time by a great deal was this spring. The river went over its banks for a week or two in some places, but I am not aware of any appreciable loss from it. The overflow of some low ground, mainly in Minnesota, at St. Vincent, delayed the freighting on the railway for a few days, causing temporary inconvenience. The bed of the railway has been raised, so that this is not likely to occur again.

"Years ago there were two or three more extensive floodings of land by the Red River, but many think that the great changes in the channel of the river make a recurrence of such flooding unlikely. At any rate there is no more inconvenience from high water in the Red River than is usually experienced now and again wherever there is a river. And after all it is very misleading to talk of the Red River as if an overflow from it could materially affect Manitoba. The Red River in Manitoba is like the Thames in England. It affects only a limited district. This is the only season since I came that the Red River overflowed its banks at all. Beyond the accidental railway delay it caused no loss or inconvenience worth mentioning, certainly not so much as the Thames and other English rivers frequently cause.

"I am, Sir,

"Faithfully yours,

"R. RUPERT'S LAND.

"The Hon.

"THE MINISTER OF AGRICULTURE."

The testimony of His Lordship with respect to the alleged flooding of the Red River is in itself conclusive; and it is particularly to be noticed that the greatest damage arose from this overflow at the point where the Province Line adjoins the State of Minnesota. The principal injury sustained was from the interruption of traffic at that point: an occurrence which has been guarded against for the future. As respects His Lordship's comparison of climate, it is to be observed that at and near the frontier, the climate in both Manitoba and Minnesota is the same. But the southern frontier of Minnesota is about 350 miles due south of this point, and the altitudes over the whole of the length of this line increase with the distance west in the direction of the Rocky Mountains.

It is almost too absurd to make the occasion of the overflowing of a river a cause of objection to the settlement of a country. It is precisely the same thing as to say that England is not a fit place to live in, because the Thames and the Mersey sometimes overflow their banks and do damage in localities. At the moment these lines are written [November 30], we have telegraphic advices from Berlin, Germany, that the Rhine is very greatly swollen, having flooded large districts of country. The telegram states that although at this date the Rhine had fallen a foot and a half within twenty-four hours, there were yet six feet of water in the streets of Cologne, Coblenz and Bonne; that at Bonne 490 houses were submerged, and nearly all the provisions and fodder in the town destroyed. Telegrams of the same date from the Hague state that there were extensive inundations in Holland, large tracts of the country being submerged, while the rivers were then still rising. Another telegram from Paris states that the Seine at that date continued to rise and that the cellars of the Palais-de-Justice and the Tribune of Commerce were flooded, as well as much other damage done. And so one might go on; but the thing is unnecessary and too absurd for argument.

HOW TO GET INFORMATION.

Any person in the United Kingdom desiring to get fuller and further information respecting Manitoba and the Canadian North-West; or information respecting routes, or prices of passage; or when or how to go; or what to take with them; or maps or pamphlets;—should apply to the office of the High Commissioner for Canada, or to any of the agents, at the subjoined addresses, either personally or by letter:—

LONDON.....SIR ALEXANDER T. GALT, G.C.M.G., &c, High Commissioner for the Dominion, 10 Victoria Chambers, London, S.W.

MR. J. G. COLMER, Secretary to the High Commissioner's Office,
[address as above.]

LIVERPOOL.....MR. JOHN DYKE, 15 Water Street.

GLASGOW.....MR. THOMAS GRAHAME, 40 St. Enoch Square.

BELFAST.....MR. CHARLES FOY, 20 Victoria Square.

DUBLIN.....MR. THOMAS CONNOLLY, Northumberland House.

BRISTOL.....MR. J. W. DOWN, Bath Bridge.

 Persons in Canada or the United States desiring fuller information respecting Manitoba and the Canadian North-West, can have maps and pamphlets furnished to them *gratis*, and post free, by applying to the
"DEPARTMENT OF AGRICULTURE, OTTAWA, CANADA."

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